

THE RELATIONSHIP OF PARENTAL ATTACHMENT, PEER ATTACHMENT,
AND SELF-CONCEPT TO THE ADJUSTMENT OF
FIRST-YEAR COLLEGE STUDENTS
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The transition to college is usually the first time many late adolescents live apart from their parents for an extended period, making it an important developmental task (Kenny, 1987) that requires a variety of adaptational resources. Bowlby's (1969/1982, 1973, 1980) attachment theory has been refined by Kenny and Rice (1995) to explain how internal working models of late adolescents are the bases of the adaptational resources that determine the quality of adjustment to college. The Kenny and Rice model may be interpreted to suggest that external resources should include relationships with parents and friends, while internal resources can include self-concept. According to the authors, "these resources are assumed to moderate or buffer the effects of developmental challenges and stressful events on adjustment" (p.437).

The purpose of the present study was to extend and further clarify the ways that quality attachment relationships and positive self-concept conjointly may promote healthy adaptation in the college milieu. In particular, the present study examined the influence of self-concept as a mediating variable with respect to attachment and healthy adjustment to college. Students from Freshman Psychology classes completed measures to assess their attachment relationships with each parent, their attachment relationships with peers, their level of self-concept, and their perceived adaptation to college. These measures were completed by students of traditional age (ages 18-20) within the first year of starting college.

The results of the study indicate that: 1) a relationship exists between attachment and self-concept; 2) attachment is associated with college adjustment; 3) self-concept is related to college adjustment, and functions as a mediator variable between attachment and college adjustment; 4) there were no gender effects in the levels of mother or father attachment, and females reported higher levels of peer attachment; and 5) there were no gender effects in overall levels self-concept, but females reported higher levels of Moral Self-Concept.

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CHAPTER I

INTRODUCTION

Attachment has been described as an affectional bond that is a "relatively long-enduring tie in which the partner is important as a unique individual and is interchangeable with none other" (Ainsworth, 1989, p. 711). Attachment theory contends that the tendency to form intimate bonds to others is innate, continues throughout the life span, and is necessary for survival (Bowlby, 1969/1982). Bowlby and Ainsworth have written that attachment bonds are not limited to one caregiver and that bonds with new individuals may form throughout the life span.

Attachment theory suggests that, during the first year of life, children begin to internally organize expectations of caregiving patterns into working models of significant others, of themselves, and of the physical environment. These working models help children perceive events, forecast the future, and make plans. The models are likely to develop in complementary and mutually confirming ways, so that children who are loved and responded to may grow up confident of the parents' affections and confident that

everyone else will find them lovable as well (Bowlby, 1973). Thus, children's experiences of caregivers and general feelings of lovability at an early age become the bases for expectations and perceptions about other relationships and about the self.

Bowlby (1969/1982, 1973, 1980) asserted that attachment behaviors are prone to being activated in times of stress. The transition to college is often the first time many late adolescents live apart from their parents for an extended period of time and is therefore an important developmental task (Kenny, 1987). Leaving home is a major life transition that could be difficult to negotiate without sufficient adaptational resources. Starting college has been regarded as an analogy to the "strange situation" (Ainsworth, Blehar, Waters, & Wall, 1978). Therefore, the quality and strength of parental attachments should influence the exploration of and adaptation to college by late adolescents (Kenny, 1987). It has been proposed that beginning college students having secure parental attachments would negotiate this important developmental task more adaptively than those students with less secure parental attachments (Kenny & Donaldson, 1991, 1992).

Ainsworth (1989), in extending attachment theory across the life span, suggested that it is likely that some dyadic relationships among peers might be close and enduring enough to be called affectional bonds or attachments, because each partner is a uniquely valued person to the other. Some friendships have an attachment component, but are short lived and specific to certain settings; other friendships with an attachment component endure even when circumstances do not allow proximity. Ainsworth posited that "it is the capacity of humans to form representational models of another and of themselves in relationship to the other that enables them to sustain a bond across time and distance" (p. 714). She admitted that the mechanism whereby some peer relationships become enduring and others do not has not been understood.

Ainsworth (1989) stressed the need for research regarding the behavioral systems underlying friendships, the circumstances that promote the development into enduring bonds, and the ways affectional bonds with peers compare and contrast with parental attachment. To date, there have been few studies (Armsden & Greenberg, 1987; Lapsley, Rice, & FitzGerald, 1990; Greenberg, Siegel, &

Leitch, 1983) that have investigated peer attachment or its possible relationship with college adaptation.

Bowlby (1980) also proposed that the internal working model of self, or the self-concept, grows out of early interactions with and attachments to responsive caregivers. According to Shavelson, Hubner, and Stanton (1976), self-concept can be broadly defined as a person's perception of himself or herself. Consistent with Bowlby's attachment formulation regarding working models of self, Marsh, Byrne, and Shavelson (1992) asserted that self-perceptions are developed through experience with and interpretations of the environment and significant others. Marsh et al. were careful to point out that self-concept is probably not an "entity" within a person, but is an important and useful construct in explaining and predicting the actions of people. Shavelson et al. proposed seven critical features of the self-concept; it is organized, multifaceted, hierarchical, stable, developmental, evaluative, and differentiable.

Despite the importance of the construct in psychology and education (Vidoni, 1976), only a few studies have examined the Self-Concept construct in a college-age population. Two studies (Erwin, 1982; Vidoni, 1976) defined

self-concept in different ways, so generalizable conclusions about the level of, changes in, or relevant aspects of college student self-concept are difficult to make. In another college sample, positive self-concept scores were related to healthy college adjustment (Mooney, Sherman, & Lo Presto, 1991). The authors concluded that a positive self-concept buffered the stressful effects of making the transition to college. These findings are neither complete nor conclusive in terms of the levels of self-concept, gender differences in self-concept, or relationships with other variables of interest in a college-age population.

In a review of the literature pertaining to future directions for attachment and college adjustment research, Kenny and Rice (1995) suggested that the "validity of models specifying mediating cognitive processes" (p. 450) should be appraised. The authors propose that the attachment model in late adolescence should be further elaborated by demonstrating relationships between various aspects of attachment, mediating psychological processes (e.g., view of self) and psychological outcomes so that interventions designed to assist the development of college students could be planned. While a number of researchers

have appraised the direct effects of college student attachment on psychological outcomes, the potential mediating processes have not been fully examined.

Bowlby's attachment theory (1969/1982, 1973, 1980) leads to a prediction that the attachment and self-concept constructs should be highly related, as the internal working models of other and self are each formed out of interactions with important caregivers and the environment. Kenny and Rice (1995) have extended the attachment paradigm to permit an understanding of the influence of external and internal resources relative to the adaptational challenges facing late adolescent college students. The Kenny and Rice model predicted that both internal and external resources determine the level and quality of college adjustment. According to Kenny and Rice, "these resources are assumed to moderate or buffer the effects of developmental challenges and stressful events on adjustment" (p.437). The Kenny and Rice model may be interpreted to suggest that external resources can include attachment relationships with others and internal resources can include a positive self-concept.

The purpose of the present study was to extend and further elucidate how quality attachment relationships

promote healthy adaptation in the college milieu. In particular, the present study attempted to clarify the relative importance of attachments to mothers, fathers, and peers to the college adjustment process in a first-year sample, as well as to illuminate the important facets and levels of self-concept in a late adolescent population in the United States. The present study specifically examined the influence of self-concept as a mediating variable with respect to attachment and healthy adjustment to college. Gender differences in levels of parental attachment, peer attachment, self-concept, and college adjustment were also investigated in the present study.

Attachment Theory

Attachment theory and research has traditionally focused upon the relationship of children with their mothers (Ainsworth, 1989). According to Bowlby (1969/1982), attachment behavior has the predictable outcome of keeping a child close to its significant caregiver and is a product of several behavioral systems. As with other behavioral systems, attachment behavior is believed to have evolved as a result of natural selection by increasing an infant's chances of being protected by close caregivers. These observable behaviors are usually easily triggered by the

caregiver's departure or by frightening events, and are terminated at the sound, sight, or touch of the caregiver. Attachment can also be conceptualized as a strong, enduring, affectional bond or relationship (Ainsworth, 1989).

Bowlby (1973) asserted that the attachment behavioral system also includes an inner organization, which is likely directed by genetics and influenced by the environment. He contended that during the first year of life, children begin to internally organize expectations of caregiving patterns into representational or working models of the attachment figures, of themselves, and of the physical environment. These working models help children to perceive events, forecast the future, and make plans. Bowlby writes:

In the working model of the world that anyone builds, a key feature is his notion of who his attachment figures are, where they may be found, and how they may be expected to respond. Similarly, in the working model of the self that anyone builds a key feature is his notion of how acceptable or unacceptable he himself is in the eyes of his attachment figures. (p. 203)

These models are likely to develop in complementary and mutually confirming ways, so that loved children may grow up confident of their parents' affections and confident that everyone else will find them lovable as well (Bowlby, 1973). Thus, caregiver interactions and children's general feelings of lovability at an early age become the bases for perceptions of relationships and the self.

Bowlby (1969/1982) contended that once children enter their second year, fairly typical attachment behaviors are almost always seen. Through examination of infants' behaviors in a laboratory "strange situation" and the relation of their responses to the mother-infant interaction at home, Ainsworth et al. (1978) observed three attachment patterns: secure, avoidant, and anxious-ambivalent. There is convincing evidence that there is continuity of attachment styles over time (Ainsworth, 1989) because of a predisposition to interpreting experiences within the framework of the early internal working models.

Expectations about caregiving behavior early in life tend to influence the relationships children have later in life, because confidence in the caregiver allows tolerance of separation from the caregiver for increasingly longer periods of time. These increasing separations are

concurrent with a child's increased motor skills, which facilitate exploration of the world and other people (Ainsworth, 1989).

Ainsworth (1989) posited a major shift in attachment behaviors with the onset of adolescence, leading the young person to establish a partnership with an age peer, usually of the opposite sex. She also maintained that young adults generally attain a sense of autonomy from their parents, as a likely result of a gradual process operating from infancy through adolescence. However, she contended that there is good reason to believe that autonomy does not necessarily imply that the young adult's attachment to parents has stopped. The importance of the parental relationship throughout childhood warrants the inference that it continues to affect a person into adulthood.

Parental Attachment Empirical Studies

Calloni and Handal (1992) administered a parental attachment inventory that allowed subjects to report retrospective and current perceptions about the relationship with their parents to 249 residential college students. The authors wanted to investigate a gender-specific development model within the theoretical framework of Bowlby (1969/1982, 1973) and Ainsworth et al. (1978).

Analyses of the Calloni and Handal (1992) results indicated that the 197 women obtained higher current maternal attachment scores than the 52 men, while no retrospective or paternal attachment differences were found. The results were interpreted to indicate that, due to the absence of a retrospective gender effect and the presence of current maternal differences, male connectedness with mothers decreased. This inference seems problematic, given that no data were presented to substantiate such a conclusion. It is possible that the male connectedness stayed the same over the retrospective and current comparisons. Male and female subjects reported strong current maternal attachments, but no retrospective or paternal scores were presented.

Kenny (1987) investigated the relationship between parental attachment, assertion and dating competence in a sample of 173 late adolescents living in college dorms. Parental relationships were described as positive, and parents were seen as accepting, respectful of differences and encouraging of independence. Analyses of the results revealed that a Quality of Parental Relationship factor was significantly correlated with the assertion measure for the 100 females only in the sample. Several factors that may

limit the generalizability of these results are: (a) the overall sample was predominantly White, (b) the students' parents were mostly affluent and well educated, (c) the questionnaire was administered after the first-year students had been on campus for at least seven months, and (d) students were recruited from only three campus dorm areas. The results, however, clarify the quality and function of parental attachment in late adolescents living in college dormitories.

In an effort to extend the findings regarding dormitory students and to further clarify the correlates of parental attachment for late adolescents, Kenny (1994) collected data from students at trade and technical schools. Participants were 130 students attending post-high-school programs as commuters, were predominantly from intact Caucasian families (75%). The results indicated that the students viewed the affective quality of the relationship with their parents as positive, and viewed their parents as fostering autonomy and providing emotional support. In addition, women who described their parents as most supportive of autonomy reported more assertive behaviors, an index of social competence that was hypothesized by Kenny to be associated with characteristics of

secure attachment. The results were consistent with other investigations and increased the applicability to a wider variety of White populations.

In summary, two of these studies (Kenny, 1987, 1994) reported that college students viewed the affective quality of the relationship with their parents as positive, and viewed their parents as fostering autonomy and providing emotional support. The results of the other investigation (Calloni & Handal, 1992) reflected high maternal attachment for females only. The results suggest that college students continue to value their relationships with their parents, while being exposed to new people, new situations, and increased academic expectations.

Peer Attachment Theory

Ainsworth (1989) suggested that it was likely that some dyadic relationships among peers might be close and enduring enough to be called affectional bonds, when each partner is a uniquely valued person to the other. Some friendships have an attachment component, but are short lived and specific to certain settings; other friendships with an attachment component endure even when circumstances do not allow proximity. Ainsworth posited that "it is the capacity of humans to form representational models of

another and of themselves in relationship to the other that enables them to sustain a bond across time and distance" (p. 714). She admitted that the mechanism whereby some peer relationships become enduring and others do not has not been understood. Ainsworth stressed the need for research regarding the behavioral systems underlying friendships, the circumstances that promote the development into enduring bonds, and the ways affectional bonds with peers compare and contrast with other attachment relationships.

Despite Ainsworth's (1989) call to investigate aspects of enduring affectional bonds with peers, no studies were found that investigated antecedents, levels, or correlates of peer attachment in late adolescent populations. Several researchers, however, have focused on the relative importance of peer attachment and parental attachment in relation to levels of personal identity, social identity, college adjustment (Lapsley et al., 1990), and self-concept (Armsden & Greenberg, 1987; Greenberg et al., 1983). Those results are discussed elsewhere in this paper.

Parental Attachment and College Adjustment Empirical Studies

The quality and characteristics of students' parental relationships may impact adaptation to new situations

(Bowlby, 1980). As students meet the social and academic challenges that college presents, they may draw upon the support and security of their families. Successful adaptation to and functioning in the college milieu may be facilitated by available quality attachment relationships in a manner similar to securely attached infants who contentedly explore their environment as long as their caregiver is in view. In contrast, insecurely attached college students may have more difficulty adapting and may exhibit distress in any number of forms.

In an early investigation of the function of parental attachment during the transition to college, Berman and Sperling (1991) hypothesized that parental attachment would be more important at the beginning of the first semester for residential students than for students who lived at home with their parents. The authors expected that separation from parents would activate and elevate the attachment drive for residential students as compared with commuters. Participants were 89 first-year students at an East Coast University who were predominantly Caucasian (80%). Attachment was indicated by maternal and paternal preoccupation and concern scales, comprised of three items per scale, developed for the study.

The results of the Berman and Sperling (1991) investigation were contrary to their hypothesis. Commuters reported greater parental preoccupation and concern than students who resided at school. More specifically, participants who lived away from home during the first semester reported a significant decrease in preoccupation with parents, while the commuter students reported a constant level of parental preoccupation from the beginning to the end of the semester. The two groups were equivalent in terms of parental preoccupation when the semester began. The authors explained the paradoxical results as indicative of the residential students' successful adjustment to the college environment and their formation of relationships with peers that may have, to some degree, replaced parental bonds.

Berman and Sperling (1991) also postulated that the amount of parental attachment present at the beginning of the first semester would be predictive of the level of depression at the end of the semester. The association between initial parental concern and preoccupation and depressed mood at the end of the semester was positive only for males in the sample. The results were interpreted to mean that males had greater difficulty tolerating the

conflict between the continued internalized parental attachment and the external separation from parents.

Kenny and Donaldson (1991) examined the contribution of parental attachment to the functioning of first-year college students, resolved some of the methodological deficiencies of a previous study (Kenny, 1987), and added a measure of family environment to better assess reasons for successful or maladaptive college adjustment. The results indicated that first-year students, ages 17 to 20, described their parental relationships as positive, reported low maladaptive family structure ratings, had moderately high social competence ratings, and showed low levels of psychological symptoms. The family variables explained a significant proportion of the variance in social competence and psychological symptoms in the female sample, while the prediction of psychosocial functioning by family variables was non-significant for the males. The sample was predominantly female (77%), White (81%), Catholic (77%) and from intact families (77%), which makes inferences about populations with different characteristics tentative.

Kenny and Donaldson (1992) investigated attachment and psychological separation with the adjustment of first-year

college women. The subjects were drawn and recruited from the same population as their 1991 study. Canonical correlation results indicated that college women who described themselves as positively attached to their parents, free from excessive guilt, mistrust, responsibility, resentment, and anger in their relationships, and possessing similar attitudes to their parents were likely to have reported satisfactory academic and personal adjustment to college.

Consistent with prior results (Kenny, 1987, 1994; Kenny & Donaldson, 1991), the sample of first-year college women (Kenny & Donaldson, 1992) viewed the quality of their parental attachments as affectively positive, and their parents both fostered autonomy and provided emotional support. The limitations of the study, such as a primarily White, middle-class sample from intact families, again limited the application to ethnically diverse students, to students of different socioeconomic levels, and to students from single-parent or remarried families.

In order to examine the relationship between family variables and late adolescent adjustment, Schultheiss and Blustein (1994b) recruited a sample of 73 female and 66 male undergraduate students, who were predominantly first-

year (44%) and Caucasian (74%) students. Only volunteers from two-parent families were included to reduce the potentially confounding effects of family structure. It was hypothesized that the shared variance of parental attachment and psychological separation would account for more variance in college student adjustment (level of academic, social, and emotional functioning) than either set of predictor variables alone.

The conjoint hypothesis was not supported for women in the sample investigated by Schultheiss and Blustein (1994b). In fact, neither psychological separation nor parental attachment was significantly related to adjustment. For the men, the pattern of results did not fully support the conjoint hypothesis and suggested that the psychological separation variables accounted for most of the shared variance in college student adjustment scores. The authors did not report when the data were collected, a factor that could have impacted the results and would have allowed comparison with earlier studies. The inclusion of upperclassmen in the sample may have changed the results in some systematic way when compared with studies including first-year students only. An analysis of group differences among the classes with respect to the

independent and dependent variables might have shed some light on the issue.

Rice, FitzGerald, Whaley, and Gibbs (1995) tested the hypothesis that secure attachment fostered successful adaptation and adjustment to college. A total of 223 students participated in a cross-sectional study, of which 37% were first-year students, 85% identified themselves as White, and 90% came from intact homes. There were no significant differences between first-year students and upperclassmen on any attachment variable, or between males and females on the parental attachment variables. MANOVA results indicated that 141 upperclassmen and 108 securely attached students reported generally higher levels of college adjustment than 82 first-year students and 55 insecurely attached students, respectively.

Rice et al. (1995) also hypothesized that attachment bonds remained stable over time, which they investigated using a two-year, time-sequential longitudinal design. On average, no significant changes in parental attachment were observed over time for males and females. The results suggested that secure attachment in the first year of college led to greater academic and emotional adjustment in the subjects' junior year. The authors pointed out

limitations of the study, such as the homogeneity of the sample, the small sample size, the possibility of cohort effects, and the lack of data from the participants' parents about their view of the attachment relations.

In summary, the literature relating parental attachment and adjustment to college has reported with relative consistency (Kenny & Donaldson, 1991, 1992; Rice et al., 1995) that traditional age college students tended to report positive relationships with their parents and that positive parental relationships were related to successful college adjustment. The investigation by Berman and Sperling (1991) reported a contrary finding, where higher levels of parental concern and preoccupation predicted greater levels of depression for the males in the study. However, the 12-item parental attachment questionnaire designed for the study measured only how frequently the subjects thought of and were concerned about their parents, which are quite limited aspects of attachment compared with numerous aspects of attachment assessed in other investigations (Kenny & Donaldson, 1991, 1992; Rice et al., 1995). Another study that reported contrasting results (Schultheiss and Blustein, 1994b), revealed that parental attachment was not significantly

related to adjustment for males or females. The authors included upperclassmen in the subject pool, excluded students from non-intact families, and did not report when data were collected, which could have impacted comparison of the results with those of other studies.

Parental Attachment, Peer Attachment, and College Adjustment Empirical Studies

A study by Lapsley et al. (1990) examined the relationship between late adolescent attachment to parents and peers and adaptation to college. The authors hypothesized that attachment to parents and, to a lesser extent, peers would account for a significant amount of variation in various college adjustment measures (Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Goal Commitment). Volunteer participants were 130 first-year students (78 males and 52 females) and 123 upperclassmen (70 males and 53 females) who were mostly Caucasian from upper-middle class backgrounds.

Lapsley et al. (1990) reported no significant class group differences for the attachment measures, while females reported more favorable peer attachment relationships than males. First-year students had lower Social Adjustment scores than did upperclassmen. In the

freshman group, parental attachment accounted for a significant amount of the variance in Academic Adjustment scores, while peer attachment accounted for a significant amount of the variance in Personal-Emotional Adjustment scores. In the group of upperclassmen, parental attachment accounted for significant amounts of the variance in Academic Adjustment (16%), Social Adjustment (9%), Personal-Emotional (16%) and Goal Commitment (9%) scores. The addition of peer attachment variables significantly improved the prediction of only Social Adjustment and Goal Commitment scores. Current study limitations include the cross-sectional design and a homogeneous sample with respect to ethnicity and socioeconomic status.

The relative effects of parent and peer attachment on college student adjustment have been investigated in one cross-sectional study (Lapsley et al., 1990). It appears that peer relationships, as predicted by Ainsworth (1989), are important to late adolescents and should be considered when assessing the availability of external resources for the college adjustment process. The relative importance of parent attachment and peer attachment to college student adjustment should be further clarified through longitudinal studies with heterogeneous populations.

Self-Concept Theory

Bowlby (1980) posited that parental attachments serve as a source of security and support, and contribute to an adolescent's internal working models of self. When the attachment figures have been available, responsive and reliable, attachment theory predicts that the individual will have an internal representation of self as good, worthy and lovable. A "working model of self" may be related, then, to the construct of a self-concept. In particular, secure working models of self, or a positive self-concept, may lead an adolescent to be less vulnerable to the situational stressors and developmental challenges inherent in the task of making the transition to college (Kenny & Rice, 1995).

Shavelson et al. (1976), in their seminal work, integrated and extended various features common to previous definitions of self-concept. In a review of the literature, they reported that early self-concept researchers had examined correlations between self-concept and other constructs, differences in average self-concept scores among different populations, and self-concept changes after some treatment. Furthermore, the authors purported that self-concept definitions were imprecise and variable across

studies. In an effort to systematically provide a more coherent framework of subsequent self-concept studies, Shavelson et al. proposed a working definition of the self-concept construct consistent with research and useful for integration of subsequent empirical evidence.

According to Shavelson et al. (1976), self-concept can be broadly defined as a person's perception of himself or herself. Self-perceptions are developed through experience with and interpretations of the environment (Marsh, Byrne, & Shavelson, 1992) and interactions with significant others. The authors were careful to point out that self-concept may not be an entity within a person, but can be an important and useful construct in explaining and predicting human behavior. Shavelson et al. proposed seven critical features of the self-concept. They maintained that the self-concept is organized, multifaceted, hierarchical, stable, developmental, evaluative, and differentiable. The multidimensionality of the self-concept was a new, basic, and important assumption of the model, because research prior to 1980 emphasized the construct of a general, overall, or total self-concept (Marsh et al., 1992).

Another important distinguishing feature of the Shavelson et al. (1976) model was the proposal that facets

of self-concept form a hierarchy that progresses from individual experiences in particular situations to general self-concept. Specifically, the authors hypothesized that the General self-concept consists of academic and non-academic self-concepts (social, emotional and physical self-concepts), which may be further divided into more specific subareas based upon experiences in specific situations.

Self-Concept Empirical Studies

A nine-year cross-sectional study by Vidoni (1976) investigated changes in the self-concepts of first-year college students. The subjects were drawn from the 1965 to 1973 first-year classes at a Midwest Catholic university. Certain background variables were reported as stable for the nine samples. The results indicated that, over the nine years, only the students' view of themselves as easy to get along with and well-liked, and their thoughtful, deliberate independence differed significantly. There were no significant differences in the Introversion (a measure of social inhibition), Anxiety, and Social Attractiveness (a measure of physical self-concept) factor scores. The author acknowledged the limited generalizability to students from other schools and the limited areas of self-concept that

were measured. The results are useful, as Vidoni concluded that some aspects of collective self-concept change occurred, but that there was surprising overall stability.

Erwin (1982) explored three facets of identity in a sample of 129 first-year college students. In the study, identity was defined as follows: (a) being sure of one's self and one's capabilities; (b) having an accurate self-perception; and (c) accepting one's body, appearance, and sexual feelings. An identity measure was administered to all of the students during summer orientation, re-administered to half the sample during the middle of their first semester and half during the middle of their second semester, to pinpoint when changes in identity took place. The results indicated that women were less confident and accepting of their body and appearance than men were after one and one-half semesters. The combined sample reported increased confidence during the first one half semester and decreased acceptance of their body and appearance over one and one half semesters. No differences were found in sexual identity scores within this sample.

Erwin (1982) concluded that the results of the study "tend to document the presence of a 'cultural shock' which many psychologists believe transpires during the freshman

year" (p. 168). This conclusion may apply more accurately to the women in the sample, who showed decreases in both confidence and acceptance of their body and appearance. It seems rather extreme to conclude that a change in acceptance of one's body and appearance equates to "culture shock" for this sample. Furthermore, there were no data presented to indicate the proportion of females and males in the sample, as separate statistical analyses may have yielded different conclusions. The results clarified gender differences in confidence levels somewhat. The operationalization of Identity in this study appeared to rely more heavily on acceptance of the students' physical and sexual self, disregarding the importance of other aspects of self.

According to Marsh et al. (1992), the multifaceted model of self-concept submitted by Shavelson et al. (1976) was plausible and heuristic, but not empirically validated. Subsequent research and validity studies have been undertaken to clarify and validate the model. Marsh and colleagues (Marsh, Barnes, & Hocevar, 1985; Marsh & O'Neill, 1985; Marsh & Shavelson, 1985) found strong support for the multidimensionality of self-concept in various analyses of responses from a sample of 151

Australian college students. However, data from the same sample revealed little support for the hierarchical structure of the self-concept. Responses in a sample of 1,202 late adolescents revealed a reasonably consistent increase in self-concept scores with age (Marsh, 1989), while the results did not support the premise that self-concept becomes more differentiated with age. All of the studies used the same questionnaire developed by Marsh in an effort to rectify earlier methodological problems and variations in the definition and measurement of self-concept.

Despite the importance of the construct in psychology and education (Vidoni, 1976), there have been few studies in a college-age population regarding the Self-Concept construct. Self-Concept has more often been employed in investigations as an outcome or moderator variable that explains other outcomes (Shavelson et al., 1976). The Vidoni and Erwin (1982) studies defined self-concept differently, making conclusions about the level of, changes in, or relevant aspects of self-concept for college students difficult to make. Future investigations would be useful to clarify the construct, especially in the United States, as most of the research pertaining to the

multidimensional model of Shavelson et al. (1976) has occurred in Australia.

Self-Concept and College Adjustment Empirical Studies

There has been little research which has explored the relationship or predictive value of self-concept to college student adjustment, despite the importance of the self-concept construct in psychology and education (Vidoni, 1976).

One study was found that recognized college adjustment and its antecedents as multidimensional phenomena. Mooney et al. (1991) examined academic locus of control, self-esteem, and geographic distance from home as predictors of overall college student adjustment. Participants were 88 female undergraduate students who were single and living away from their parents. The study was conducted during the fourth week of the first semester.

The results of the Mooney et al. (1991) investigation indicated that there was a significant positive, linear relationship between academic locus of control and college adjustment. More specifically, the internally oriented students tended to have higher adjustment scores than externally oriented students. There was also a significant positive, linear relationship between self-esteem and

college adjustment, and between perceived distance from home and adjustment. The actual distance from home was not linearly related to college adjustment. Academic locus of control was the strongest predictor, followed by self-esteem and perceived distance from home. The authors acknowledged that the sample size may have produced a spuriously high multiple R . In addition, the homogeneity of the sample, especially in terms of living situation, gender, ethnicity and socioeconomic status, may limit the generalizability to samples with different characteristics.

Brooks and DuBois (1995) examined various individual and environmental predictors of college student adjustment within a first-year sample. The sample consisted of 56 students at a large, Midwestern public university. Gender was eliminated from the final analysis because of non-significant correlations with the criterion measures. The results indicated that background characteristics (age and family income), individual measures (surgey/intellect - a summary score that included a self-worth score), and environmental measures (support satisfaction and distance from home) all made significant contributions to social adjustment scores. Family income and American College Test (ACT) scores made significant predictive contributions to

the subjects' personal/emotional adjustment. ACT and problem-solving scores, which are individual characteristics, predicted academic adjustment.

In summary, individual predictors accounted for a more substantial proportion of the variance in adjustment scores than environmental predictors did in the Brooks and DuBois (1995) investigation. Social adjustment to college appears to have a more differentiated set of antecedents than either personal/emotional or academic adjustment, especially given that the individual predictor called surgency/intellect was comprised of three personality subscale scores and a global self-worth score. As with previous investigations, these results may be less applicable to ethnically diverse students, as 96% of the sample was White. Further limitations acknowledged by the authors include the cross-sectional design, the small self-selected nature of the sample, and the period during which the study was conducted (during the second semester of the first year).

The influence of the environmental variables in the Brooks and DuBois (1995) study may have been biased in a systematic way by the use of a social support interview. The interview asked the subjects to list the persons they

would go to for support, the people who actually provided support, and the persons with whom they typically had negative interactions. As described in the article, the directions for the social support interview may have led students to list the persons geographically closest to them (e.g., peers), rather than considering phone calls with far-away family members as support. Given previous findings illuminating the importance of parental attachment to college student adjustment (Kenny & Donaldson, 1991, 1992; Rice et al., 1995), this possible bias toward peers may have tempered the predictive value of the social support measure for parents regarding personal/emotional and academic adjustment.

The literature that relates self-concept or self-esteem to college student adjustment is in need of expansion. Several studies have used either self-esteem (Armsden & Greenberg, 1987; Greenberg et al., 1983) or ego identity achievement (Quintana & Lapsley, 1987; Schultheiss & Blustein, 1994a) as indicators of adjustment or well-being in college samples, while only two (Brooks & DuBois, 1995; Mooney et al., 1991) employed self-esteem as a predictor of overall college student adjustment. Further elaboration of the link between a positive self-concept and

healthy college adjustment is needed, given the importance of the self-concept construct to psychology and education (Vidoni, 1976) and the stress buffering effects of a positive self-concept found by Mooney et al. (1991).

Parental Attachment, Peer Attachment, and Self-Concept Empirical Studies

As proposed by Bowlby (1973), the attachment paradigm includes interpersonal and intra-personal aspects, which tend to be complementary and mutually confirming. Several studies, in an effort to extend research beyond infancy and early childhood, have addressed the association between the interpersonal and intra-personal aspects of attachment (Armsden & Greenberg, 1987; Greenberg et al., 1983; Lapsley et al., 1990; Quintana & Lapsley, 1987; Schultheiss & Blustein, 1994a). In addition, the studies explored the association between family relationships and adaptation or well being.

Quintana and Lapsley (1987), to extend previous studies about attachment and self-concept (Armsden & Greenberg, 1987; Greenberg et al., 1983) to the acquisition of ego identity, examined the relationship between parental attachment and ego identity achievement in a sample of first-year college students. A structural equations

modeling analysis resulted in appropriate parental attachment and identity achievement loadings, indicating that the measures used in the study provided well-defined constructs. Quintana and Lapsley reported that the relationship between parental attachment and ego identity was not significant, and concluded that positive parental attachment in adolescence does not contribute to identity acquisition. They suggested that future research assess adolescents' attachments to mother and father separately. The authors did not report the age range or class composition of the sample, which would have further clarified the results.

Schultheiss and Blustein (1994a) studied the conjoint influence of parental attachment and psychological separation on ego identity development in a college-age sample. It was hypothesized that individuals who exhibited greater psychological separation from parents in conjunction with stronger parental attachment would be more likely to explore and commit to their identities. The participants were introductory psychology students (92 women and 82 men), and analyses were conducted separately for the females and males.

The Schultheiss and Blustein (1994a) results did not support the conjoint hypotheses within the female sample; however, the attachment and separation variables were each significantly associated with ego identity status. Within the male sample, the results revealed that the psychological separation variables were more influential to the identity formation process than the attachment variables. The authors reported several study limitations, including the cross-sectional nature of the design, the use of self-report measures, and the use of samples drawn exclusively from a college population who reported living with both parents.

A study by Lapsley et al. (1990) examined the relationship between late adolescent attachment to parents and peers and an indicator of student adaptation. The authors hypothesized that attachment to parents and peers would account for a significant amount of variation in both personal and social identity. Personal identity was defined as the private conception of self and a feeling of continuity and uniqueness, while social identity concerned the roles and relationships of the subjects. Volunteer participants were 130 first-year students and 123

upperclassmen who were mostly Caucasian from upper-middle class backgrounds.

No significant class group differences were found for the attachment measures in the Lapsley et al. (1990) study. Women reported more favorable attachment relationships with peers and had higher scores on the Personal Identity measure than men in this sample. Personal and social identity scores were significantly predicted by parental attachment for first-year students and upper division students, a finding contrary to a similar investigation by Quintana and Lapsley (1987). However, the identity measures were different in the two studies. Peer attachment improved the prediction of personal and social identity scores for the upperclassmen and of personal identity for the first-year students. The study limitations included the cross-sectional design and a homogeneous sample with respect to ethnicity and socioeconomic status.

Greenberg et al. (1983) tested the prediction that the perceived quality of parent and peer attachments would be significantly related to adolescent self-concept. Participants were 202 junior and senior high school students. After controlling for age, gender, and reported negative/positive life events, the quality of affect toward

parents accounted for 11%, and peer variables accounted for 5%, of the variance in self-concept scores in the sample of adolescents. The Tennessee Self-Concept Scale (TSCS; Roid & Fitts, 1988) measured self-concept and psychological health for the study.

The Greenberg et al. (1983) results suggested that warm relationships with parents and, to a lesser extent, peers are predictive of higher levels of self-concept and psychological health among 12- to 19-year-olds. There were no differences between the older and younger adolescents in this sample in either attachment quality or seeking out of others in times of need. Parental education and parental marital status were not significantly related to either the independent or dependent variables in the sample. The adolescents were mostly Caucasian, from middle class homes, and still lived at home with their families, which may limit the ability to generalize the results to adolescents from other ethnic and family backgrounds.

In 1987, Armsden and Greenberg examined the association between the quality of attachment and various measures of psychological status in a sample of 86 undergraduate students ranging in age from 17 to 20 years. Over 80% of the students were Caucasian, 15% were Asian or

Asian American, and almost 75% were living away from home when the data were collected. There were no differences found in attachment or self-concept scores when Caucasian versus non-Caucasian students and subjects living at home versus those living away were compared. There were also no gender differences. Parental attachment accounted for 18%, and peer attachment for 19%, of the variance in self-concept scores. In summary, parent and peer attachment scores together accounted for 37% of the variance in self-concept scores in this college-aged population.

The results in this area of the literature are equivocal. The investigation by Quintana and Lapsley (1987) revealed no relationship between parental attachment and ego identity, in contrast to findings by Lapsley et al. (1990) and Schultheiss and Blustein (1994a). Lapsley et al. reported that parent and peer attachment accounted for about 20% of personal identity scores, and parent attachment accounted for about 8% of social identity scores. Schultheiss and Blustein found that the attachment variables were significantly predictive of ego identity status achievement only for the females in their sample. The Quintana and Lapsley analysis did not include a control for gender, which might have allowed greater specificity of

their model. It is also possible that the relatively larger number of males in the Quintana and Lapsley study, 77 of 101, influenced the analyses. Furthermore, all three studies used different measures of ego identity status.

Armsden and Greenberg (1987) and Greenberg et al. (1983) found that, in early to late adolescent samples, parental attachment accounted for a significant amount of the variance in self-concept scores. In summary, it appears from the literature that parental attachment is related to self-concept and ego identity in early adolescence and young adulthood. However, the use of several identity constructs confuses the issue, as it appears that self-concept more often signifies how positive the self-view is, while ego identity is a reflection of the degree to which an individual has decided upon who he or she is.

Purpose of Study

The purpose of the present study was to extend and further specify how attachment relationships with parents and friends may promote healthy adaptation to the college milieu. In particular, the present study attempted to clarify the relative importance of mother, father, and peer attachments to the process of healthy college adjustment in a first-year college sample. Furthermore, the study

attempted to explicate the levels, correlates, and important facets of self-concept in a United States late adolescent sample. Gender differences in levels of parental attachment, peer attachment, self-concept, and college adjustment were also investigated.

The present study examined the influence of mediating variables with respect to healthy college adjustment. Specifically, the literature pertaining to parental and peer attachment, self-concept and college adjustment was extended to test a model with self-concept as a mediating variable between attachment and adjustment to college. According to Baron and Kenny (1986), a mediator variable accounts for the relationship between the predictor and criterion variables. Mediator variables "explain how external physical events take on internal psychological significance" (p. 1176). The authors submit that three conditions must exist for a variable to be considered a mediator variable. First, the predictor must be associated with the mediator variable. Second, the predictor variable must be associated with the criterion variable. Third, when both the predictor and mediator are used to predict the criterion, the mediator must be associated with the criterion variable. Finally, the association between the

mediator and the criterion must be greater than the relationship between the predictor and criterion.

In the present study, the attachment variables (Mother, Father, and Peer) served as predictor variables, the self-concept factors (Physical, Moral, Personal, Family, Social, Academic-Work Self-Concepts) as mediator variables, and overall college adjustment as the criterion.

Hypotheses

Bowlby's (1969/1982, 1973, 1980) model of attachment specified that the internal working models of others, the self, and the world develop in complementary and mutually confirming ways. Kenny and Rice (1995) proposed that first-year college students access external and internal resources when they negotiate the transition to college. Following these models, it was hypothesized that parent and peer attachment, as external resources, and self-concept, an internal resource, would be significantly related to the adjustment of first-year college students.

Hypothesis 1 of this study stated that attachment would be significantly associated with the self-concept dimensions. Bowlby's attachment theory (1969/1982, 1973, 1980) leads to a prediction that the self-concept and parent/peer attachment constructs would be highly related,

as the working models of self and other are each formed out of interactions with important caregivers and the environment. Armsden and Greenberg (1987) and Greenberg et al. (1983) found that, in early to late adolescent samples, parental attachment accounted for a significant amount of the variance in self-concept scores.

Hypothesis 2 of this study stated that attachment would be significantly related to healthy college adaptation. The literature relating parental attachment and adjustment to college has consistently (Kenny & Donaldson, 1991, 1992; Rice et al., 1995) reported traditional age college students as having positive relationships with their parents and that positive parental relationships can be predictive of successful college adjustment.

Hypothesis 3 of this study stated that the various self-concept factors would be significantly associated with healthy adjustment to college, and would be more strongly associated than the relationship between attachment and adjustment to college (Hypothesis 2 results). There is limited research that relates self-concept factors to healthy adaptation to college. Brooks and DuBois (1995) and Mooney, Sherman, & Lo Presto (1991) reported that global self-esteem or self-worth was linearly or conjointly

associated with various indicators of college adjustment. Furthermore, many studies have utilized self-concept as an indicator of level of adjustment to college. It appears that attachment variables influence the college adjustment process, though the relative importance of attachment with self-concept factors in predicting adaptation has not been well researched. The relationships may be more complex, where self-concept factors mediate the influence of attachment on college adjustment.

Hypothesis 4 of this study stated that there would be gender differences in the attachment factors. The work of Gilligan and Josselson (as cited in Kenny, 1994) indicates that gender is an important consideration in the research and theory about attachment. In addition, findings in the literature point to gender differences with respect to parental attachment (Calloni & Handal, 1992; Kenny, 1987, 1994; Kenny & Donaldson, 1991; Schultheiss & Blustein, 1994a).

Hypothesis 5 of this study stated that there would be no gender differences within the self-concept factors. Marsh (1989) reported that, though males tended to have higher general self-concept scores than females, the subfactor scores were variable in terms of gender.

CHAPTER II

METHOD

Participants

Data were collected in 1999 from 181 University of North Texas students enrolled in first-year psychology classes during the Spring, Summer, and Fall semesters. The present study focused on the adjustment of first-year students aged 18 to 20, so data collected from 14 second year students and four 17-year-olds were excluded from the analyses. Data collected from five first-year students, one man and four women, were not included in the analyses because the subjects completely filled out two of the three questionnaires, but left more than 50% of another questionnaire blank. The remaining 158 first-year subjects completed at least 90% of all three questionnaires, and the missing questions were replaced using procedures outlined in the Tennessee Self-Concept Scale, Second Edition (TSCS-2; Fitts & Warren, 1996) and Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989) manuals. There were no differences found between the 23 subjects excluded

from the study and the remaining 158 participants on any variables of interest to this study.

The mean age of the 158 subjects for this study was 18.65. Participants identified their ethnicity as follows: Caucasian 65.8%, African American 14.6%, Hispanic 10.1%, Asian 5.1%, and Other 4.4%. None of the subjects reported that they were married. Most of the participants (58.2%) lived in a residence hall, while 25.9% lived with one or both parents and 15.8% lived in an apartment alone or with friends. Demographic variables of interest for the study are presented in Table 1 (see Appendix F).

Males and females each comprised 50% of the sample. Analyses of the demographic variables revealed the men and women in this sample are equivalent in terms of age, ethnic/racial background, student relationship status, residential status, percent of expenses paid by student, and parent marital status.

This study was approved by the Institutional Review Board for the Use of Human Subjects at the University of North Texas (No.99-058).

Instruments

Demographic Questionnaire. This is a 23-item questionnaire developed for the study. The demographic

questionnaire (see Appendix A) gathers basic biographical information, such as age, gender, ethnicity, and religious affiliation. The questionnaire includes items pertaining to the students' family, such as parents' marital status, parents' occupations, and years of parental education. The personal data questionnaire also contains questions about the students' perceptions about the closeness of their relationship with each parent, when the parents divorced (if applicable), and an estimate of how often students visit their parents. This questionnaire includes items that assess where the subjects live (i.e., with parents, in a residence hall, or in an apartment) and the percentage of expenses contributed by the participants.

Inventory of Parent and Peer Attachment - Revised

(IPPA-R; Armsden & Greenberg, 1989). This instrument (see Appendix B) assessed the participants' perceptions of the quality of parental and peer attachments, and particularly how well these figures serve as sources of psychological security. The questionnaire is a 75-item self-report objective measure in a five-point Likert-type format that provides separate ratings for attachments to mother, father and peers (25 items each). High scores indicate secure attachment and low scores denote insecure attachment.

Armsden and Greenberg (1989) reported Cronbach's alpha internal consistency coefficients of .87 for Mother Attachment, .89 for Father Attachment, and .92 for Peer Attachment. In a sample of twenty-seven 18- to 20-year-olds, Armsden and Greenberg (1987) reported three-week test-retest reliability coefficients for the original version of the IPPA-R of .93 for Parent Attachment (mothers and fathers rated together) and .86 for Peer Attachment. The authors (1989) maintained that only minor changes were made to the original IPPA, so test-retest reliability data were not reported for the revised questionnaire. In terms of validity, Armsden and Greenberg (1987) reported that parent attachment scores were significantly related to indicators of family environment, family and social self-concepts, and the tendency to seek the support of parents in times of need. Peer attachment scores were related to social self-concept and the tendency to seek out parents and friends in times of need, but not to family environment measures. Parent and peer attachment scores were also predictive of self-esteem, life satisfaction, and depression and anxiety scores.

Tennessee Self-Concept Scale Second Edition (TSCS-2; Fitts & Warren, 1996). This instrument assessed the

students' global self-concept. The TSCS-2 Adult Form (see Appendix C) consists of 82 self-descriptive statements the subjects answer in such a way as to portray their own self-pictures (Fitts & Warren, 1996). The instrument is in a five-point Likert-type format and yields a Total score, which reflects the respondents' overall level of self-concept and related level of self-esteem. In addition, scores are provided for Physical, Moral, Personal, Family, Social, and Academic/Work Self-Concepts. In light of findings regarding the multidimensionality of the self-concept (Marsh, 1989; Marsh, Barnes, & Hocevar, 1985; Marsh & O'Neill, 1985; Marsh & Shavelson, 1985; Shavelson, Hubner and Stanton, 1976), the present study utilized the six TSCS-2 Self-Concept subscale scores in the analyses. Three Supplementary Scores (Identity, Behavior, and Satisfaction), which combine the self-concept scale items in a way that reflects the original theoretical development of the test, were not used in the present study analyses.

Fitts and Warren (1996) reported Cronbach's alpha internal consistency coefficients ranging from .73 on the Social Self-Concept scale to .95 on Total Self-Concept. The authors reported one- to two-week test-retest reliability coefficients of the TSCS-2 Adult Form ranging from .70 on

the Social scale to .82 on the Total Self-Concept Scale. The authors have provided equivalency studies for the two most recent TSCS versions, so the validity of the TSCS-2 is based primarily on research with the previous version. Validity studies have found correlations between the TSCS Total score and the Piers-Harris Children's Self-Concept ranging between .51 and .80; additionally, correlations with the Coopersmith Self-Esteem Inventory ranged from .64 and .75 (Roid & Fitts, 1988).

Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). This questionnaire assessed the level of adaptation to the various demands of the first year of college. The SACQ (see Appendix D) is a 67-item self-report questionnaire in a nine-point Likert-type format that can be administered individually or in a group. High scores represent better self-assessed adjustment to college and low scores denote more difficulty with the transition. In addition to an overall adjustment score, the SACQ yields four subscale scores: Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Institutional Attachment.

Baker and Siryk (1989) reported Cronbach's alpha internal consistency coefficients ranging from .92 to .95

for the Full scale and from .77 to .91 for the four subscales. No stability data were submitted. In terms of validity, the authors reported positive relationships between subscale scores, the full-scale score, and external criteria such as attrition, seeking counseling services, first-year Grade Point Average (GPA), and two indices of social involvement.

It should be noted that the SACQ normative group was comprised of 1,424 first-year students at a private, northeastern university. Though the norms are presented by gender and semester, no other demographic data were reported. Baker and Siryk (1989) reported that SACQ scores from other universities and colleges indicate that institutional differences may be small when compared with the normative group.

Procedure

Participants were recruited through the subject pool at the University of North Texas and received extra credit in Psychology courses for their participation in the present study. The students were asked to participate in a study about college students' peer and family relationships. They were provided with a consent form (see Appendix E) that was immediately separated from the rest of

the questionnaires after completion to ensure confidentiality. Participants were asked to omit their names from the packets to further ensure confidentiality and to increase the probability of candid responses to questions. Each participant completed a packet containing the following measures: Demographic Questionnaire, Inventory of Parent and Peer Attachment - Revised, Tennessee Self-Concept Scale: Second Edition, and Student Adaptation to College Questionnaire. All instruments except the Demographic Questionnaire were counterbalanced to avoid order effects.

Data Analysis

First, descriptive statistics were generated for the demographic variables, the predictor measure, the mediator measure, and the outcome measure. The variables were subjected to an exploratory analysis by examining the means, variances, and visually displayed distributions. The distributions of the variables were scrutinized to determine if the assumptions for the statistical analyses were met.

The next analysis calculated instrument reliabilities (coefficient alpha) for the IPPA-R, the TSCS-2, and the SACQ. The instrument reliabilities were computed to

discover if the present study population was different than previous samples on which reliabilities or norms for the instruments have been calculated.

Third, Pearson correlations were generated between all measures in order to observe the overall pattern of interrelationships among the variables. Significance tests for the correlations were one-tailed, based on the hypothesis that more positive parental attachment, peer attachment, and self-concept (higher scores) would be associated with more favorable adjustment to college.

A further exploratory analysis of the present data was conducted because two studies by Anderson and Fleming (1986; Wilson, Anderson, & Fleming, 1987) revealed that students who lived apart from their parents reported lower college maladjustment scores. Therefore, it is possible that participants in the present sample who lived with their parent(s) could show differences in college adjustment compared with subjects who lived in residence halls or in apartments. A one-way analysis of variance (ANOVA) was performed with place of residence (i.e., at home with parent or parents, in a residence hall, or in an apartment) serving as the independent variable and the overall SACQ score as dependent variable. Results of the

ANOVA analysis were not significant, $F(2, 155) = 2.562$, $p = .08$. In other words, students living with their parent(s), in a residence hall, or in an apartment reported similar levels of college adjustment in this sample.

The role of attachment factors and self-concept in the adjustment of college students was investigated with standard multiple regression analyses, where the predictor subscale scores were entered as a group and the mediator subscale scores were entered as a group. The Mother Attachment, Father Attachment and Peer Attachment scores from the IPPA-R served as the predictor variables. The six self-concept subscale scores (Physical, Moral, Personal, Family, Social, and Academic-Work) from the TSCS-2 served as the mediator variables. The criterion variable was the overall adjustment score from the SACQ.

Separate regression analyses were performed for the male and female samples because the work of Gilligan and Josselson (as cited in Kenny, 1994) indicated that gender is an important consideration in the research and theory about attachment. In addition, findings in the literature point to gender differences with respect to parental attachment (Calloni & Handal, 1992; Kenny, 1987, 1994;

Kenny & Donaldson, 1991; Schultheiss & Blustein, 1994a) and self-concept (Marsh, 1989).

Gender differences relating to the attachment variables were examined using a multivariate analysis of variance (MANOVA), with gender serving as the independent variable and Mother Attachment, Father Attachment, Peer Attachment scores serving as the dependent variables. If a significant main effect was found for gender, univariate tests examined which mean differences contributed to the significant overall gender differences.

Gender differences relating to the Self-Concept variables were examined using a multivariate analysis of variance (MANOVA), with gender serving as the independent variable and Physical Self-Concept, Moral Self-Concept, Personal Self-Concept, Family Self-Concept, Social Self-Concept, and Academic-Work Self-Concept scores serving as the dependent variables. If a significant main effect was found for gender, univariate tests examined which mean differences contributed to the significant overall gender differences.

CHAPTER III

RESULTS

Variable Descriptions for the Sample

Descriptions of the present sample predictor, proposed mediator, and criterion variables were obtained by examining means for the Inventory of Parent and Peer Attachment, Revised (IPPA-R; Armsden & Greenberg, 1989), the Tennessee Self-Concept Scale Second Edition (TSCS-2; Fitts, & Warren, 1996), and the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Inspection of the variable means suggests that overall, the present subjects report positive attachments to their mothers, fathers and peers, high average levels of self-concept, and high average levels of adaptation to college. Descriptive statistics all the measures used in the study are reported in Table 2 (see Appendix F).

Instrument Validity Analysis

The TSCS-2 provides four Validity scores for examining response bias; they are Inconsistent Responding, Self-Criticism, Faking Good, and Response Distribution. In the present sample, the levels and pattern of Validity scores

were evaluated before the data analyses to determine if participants had responded to the instrument in defensive, guarded, socially desirable, or distorted manners. The scores and validity patterns for the 158 participants were found to be within normal limits.

Reliability Data

The internal consistency of each measure and subscale administered to the participants, indicated by Cronbach's coefficient alpha, was adequate. The reliability results for all measures that were administered to participants are presented in Table 3 (see Appendix F). These reliability data are generally consistent with results from previous studies in which the measures have been used. In this sample, only the Academic/Work Self-Concept subscale reliabilities were lower than reported in the TSCS-2 manual (Fitts & Warren, 1996). The manual reported coefficient alphas for the Academic/Work subscale of .81 to .85, while the present study found internal consistency coefficients of .77 for men and .75 for women.

Correlations

Simple one-tailed correlation coefficients between the predictor, mediator, and criterion variables were computed for the male and female participants in this study in order

to observe the overall pattern of inter-relationships. The correlations are presented in Table 4 (see Appendix F).

Correlation analyses can also provide information about multicollinearity, a situation that occurs when independent variables are very highly correlated. Tabachnick and Fidell (1996) explain that multicollinearity tends to weaken a statistical analysis because the variables contain redundant information and are therefore not all needed in the same analysis. They suggest that bivariate and multivariate correlations above .7 indicate a possible multicollinearity problem. Several bivariate correlations among the predictor and mediator variables, displayed in Table 5 (see Appendix F), exceed .7 in the present sample.

To determine multivariate correlations, Tabachnick and Fidell (1996) recommend computing the squared multiple correlation (SMC). The SMC is figured when each independent variable serves as the dependent variable in a regression equation with the rest of the independent variables. Table 6 (see Appendix F) reports the SMC values of the proposed predictor and mediator variables. Personal Self-Concept is highly related to the other predictor and mediator variables for the men (SMC = .715) and women (SMC = .730)

in the sample. In addition, Family Self-Concept is highly intercorrelated with the other independent variables for the women in the sample ($SMC = .726$).

Licht (1998) noted that high bivariate and multivariate correlations between predictors can be problematic because the intercorrelated variables may largely measure the same construct. To resolve the statistical and inferential problems associated with multicollinearity, the author suggested that variables with high empirical intercorrelations be combined or replaced. To limit the impact of multicollinearity within the individual self-concept factors, the overall Self-Concept score from the TSCS-2 was used to test the mediational hypotheses for the present study.

Regression Analyses

The role of attachment and self-concept factors in the adjustment of first-year college students was investigated with standard multiple regression analyses. Regression analyses allow one to assess the variables which enhance the ability to predict a criterion, taking the correlation of the predictors with each other into account statistically, so that each significant predictor variable

contributes unique, non-redundant information to predicting the outcome variable (Cone & Foster, 1993).

Regression procedures assume a multivariate normal distribution, linearity between each predictor and criterion, homoscedasticity, the absence of multicollinearity, and the presence of singularity. Several variables were transformed to reduce skewness and improve the normality, linearity, and homoscedasticity of residuals. As recommended by Hartwig & Dearing (1979), nonlinear transformation of the Father Attachment, Family Self-Concept, and Social Self-Concept scales was performed for the men, by taking the square root of the reflection of each score. For the women in the sample, the Mother Attachment scale was transformed by taking the square root of the reflected score and the Peer Attachment scale was transformed logarithmically. After transforming the variables, the linearity and homoscedasticity assumptions were checked by examining the residual scatterplots. The linearity and homoscedasticity assumptions were met for Hypothesis 1, Hypothesis 2, and Hypothesis 3. Collinearity diagnostics, bivariate correlations, and multivariate correlations for the predictor and mediator variables were examined and resolved as discussed above. The scales used

as predictors, mediators, and criteria are singular, in that either scale scores (IPPA-R) or total scores (i.e., TSCS-2 & SACQ) were used, but not both in the same regression. Finally, an examination of the data revealed no significant univariate or multivariate outliers.

Hypothesis 1 - Men. The multiple regression model of attachment factors predicting overall self-concept was significant for Hypothesis 1 for the 79 men in this study. Overall self-concept level was predicted by a combination of mother attachment, father attachment, and peer attachment. Specifically, the three attachment factors together accounted for 41% of the variance ($R^2 = .406$) in self-concept scores, $F(3, 75) = 17.09$, $p < .001$. Table 7 (see Appendix F) displays the results for Hypothesis 1.

Two of the three variables contributed significantly to the prediction of overall self-concept, Mother Attachment ($sr_i^2 = .20$) and Peer Attachment ($sr_i^2 = .05$). The three predictors in combination contributed another .15 in shared variability to the prediction of self-concept.

Hypothesis 1 - Women. The multiple regression model of attachment factors predicting overall self-concept was significant for Hypothesis 1 for the 79 women in the study. In other words, the overall level of self-concept was

predicted by a combination of mother attachment, father attachment, and peer attachment. Specifically, the three attachment factors together accounted for 46% of the variance ($R^2 = .459$) in self-concept scores, $F(3, 75) = 21.23$, $p < .001$. Table 7 (see Appendix F) displays the results for Hypothesis 1.

Two of the three variables contributed significantly to the prediction of overall self-concept, Mother Attachment ($\underline{sr}_i^2 = .23$) and Father Attachment ($\underline{sr}_i^2 = .06$). The three predictors in combination contributed another .16 in shared variability to the prediction of self-concept.

Hypothesis 2 - Men. The multiple regression model of attachment factors predicting overall college adjustment was significant for Hypothesis 2 for the 79 men in this study. In other words, the overall level of college adjustment was predicted by a combination of mother attachment, father attachment, and peer attachment. Specifically, the three attachment factors together accounted for 32% of the variance ($R^2 = .316$) in college adjustment scores, $F(3, 75) = 11.55$, $p < .001$. Table 8 (see Appendix F) displays the results for Hypothesis 2.

Two of the variables, Mother Attachment ($\underline{sr}_i^2 = .06$) and Peer Attachment ($\underline{sr}_i^2 = .12$), contributed significantly

to prediction of overall college adjustment. The three predictors in combination contributed another .12 in shared variability to the prediction of college adjustment.

Hypothesis 2 - Women. The multiple regression model of attachment factors predicting overall college adjustment was significant for Hypothesis 2 for the 79 women in the study. In other words, the overall level of college adjustment was predicted by a combination of mother attachment, father attachment, and peer attachment. Specifically, the three attachment factors together accounted for 25% of the variance ($R^2 = .254$) in college adjustment scores, $F(3, 75) = 8.51$, $p < .001$. Results from Hypothesis 2 are displayed in Table 8 (see Appendix F).

Two of the variables, Mother Attachment ($sr_i^2 = .10$) and Father Attachment ($sr_i^2 = .05$), contributed significantly to the prediction of overall college adjustment. The three predictors in combination contributed another .09 in shared variability to the prediction of college adaptation.

Hypothesis 3 - Men. The multiple regression model of attachment factors and self-concept predicting college adjustment was significant for Hypothesis 3 for the 79 men in this study. In other words, the overall level of college

adjustment was predicted by a combination of mother attachment, father attachment, peer attachment, and overall self-concept. Specifically, the attachment factors and overall self-concept together accounted for 56% of the variance ($R^2 = .557$) in college adjustment scores, $F(4, 74) = 23.22$, $p < .001$. Table 9 (see Appendix F) displays the results for Hypothesis 3.

Two variables, Peer Attachment ($\underline{sr}_i^2 = .04$) and Total Self-Concept ($\underline{sr}_i^2 = .24$), contributed significantly to the prediction of overall college adjustment. The four predictors in combination contributed another .27 in shared variability to the prediction of college adaptation.

Hypothesis 3 - Women. The multiple regression model of attachment factors and self-concept predicting college adjustment was significant for Hypothesis 3 for the 79 women in this study. In other words, the overall level of college adjustment was predicted by a combination of mother attachment, father attachment, peer attachment, and overall self-concept. Specifically, the attachment factors and self-concept accounted for 48% of the variance ($R^2 = .482$) in college adjustment scores, $F(4, 74) = 17.19$, $p < .001$. Table 9 (see Appendix F) displays the results for Hypothesis 3.

Only Total Self-Concept ($\underline{sr}_i^2 = .23$) contributed significantly to the prediction of overall college adjustment for the women. The four predictors in combination contributed another .25 in shared variability to the prediction of college adaptation.

The Mediational Model - Men. The third condition of the Baron and Kenny (1986) mediational model requires that Self-Concept (mediator) must affect College Adjustment (criterion) in Hypothesis 3. For the men in the sample, overall Self-Concept was significantly related to College Adjustment ($\beta = .64$, $p < .001$) and contributed 24% of unique variability to the prediction of College Adjustment.

The third mediational test also specifies that the effect of the Attachment factors (predictor) on College Adjustment should decrease with the inclusion of Self-Concept in the regression equation. For the transformed variables, the absolute value of the beta coefficients must be used in evaluating changes from Hypothesis 2 to Hypothesis 3. The Attachment beta coefficients for Hypothesis 2 and Hypothesis 3 are presented in Table 10 (see Appendix F).

For the male participants in the study, the effect of each attachment factor on college adjustment was reduced when overall self-concept was accounted for. The effect of Mother Attachment was reduced from $\beta = .27, p < .05$ to $\beta = -.05, ns$, when controlling for self-concept. When self-concept is controlled for, the effect of Father Attachment was reduced from $\beta = |.15|, ns$ to $\beta = |.10|, ns$. The effect of Peer Attachment, when self-concept was held constant, is reduced from $\beta = .36, p < .01$ to $\beta = .22, p < .05$. Only Peer Attachment remained a significant predictor of college adjustment when the mediating variable Self-Concept was included for the males in the study.

The Mediational Model - Women. For the women in the study, Self-Concept was significantly associated with College Adjustment ($\beta = .65, p < .001$) and contributed 25% of unique variability to the prediction of College Adjustment. The absolute value of the beta coefficients must be used in evaluating changes in the transformed variables from Hypothesis 2 to Hypothesis 3. The Attachment beta coefficients for Hypothesis 2 and Hypothesis 3 are presented in Table 10 (see Appendix F).

For the female participants in this study, the effect of each attachment factor on college adjustment was reduced when overall self-concept was accounted for. The effect of Mother Attachment was reduced from $\beta = .33$, $p < .01$ to $\beta = .00$, ns, when controlling for self-concept. When self-concept was controlled for, the effect of Father Attachment was reduced from $\beta = .24$, $p < .05$ to $\beta = .07$, ns. The effect of Peer Attachment, when self-concept was held constant, was reduced from $\beta = .12$, ns to $\beta = .04$, ns. None of the attachment factors remained a significant predictor of college adjustment when the mediating variable Self-Concept was included.

Regressions for the Individual Self-Concept Factors.

The multiple regression model of attachment and self-concept factors predicting college adjustment was significant for the 79 men and 79 women in this study. In other words, the overall level of college adjustment was predicted by a combination of mother attachment, father attachment, peer attachment, physical self-concept, moral self-concept, personal self-concept, family self-concept, social self-concept and academic/work self-concept. Specifically, the attachment and self-concept factors

together accounted for 58% of the variance ($\underline{R}^2 = .579$) in college adjustment scores, $F(9, 69) = 10.528$, $p < .001$ for the men. The attachment and self-concept factors together accounted for 52% of the variance ($\underline{R}^2 = .521$) in college adjustment scores, $F(9, 69) = 8.344$, $p < .001$ for the women. Table 11 (see Appendix F) displays the results for the individual self-concept factors in the mediational model.

None of the individual attachment or self-concept factors contributed significant unique variation, while the nine predictors in combination contributed .50 in shared variability to the prediction of college adaptation for the men in the sample. Personal Self-Concept was the only variable that contributed significant unique variance ($\underline{sr}^2 = .04$), while the nine predictors in combination contributed .45 in shared variability to the prediction of college adaptation for the women in the sample.

In summary, the results of the regressions that included all nine predictor and mediational variables indicated that attachment and self-concept factors in combination significantly predicted the adjustment to college for the men and women in this sample. Furthermore, the hypothesis that the effect of the attachment factors on

college adjustment would decrease when the self-concept factors were included was supported for the men and women in the study. However, none of the specific self-concept factors was significantly related to adjustment for the males when considering the effects of attachment, and only Personal Self-Concept was related to adjustment for the females. Thus, the mediational model of the multi-dimensional self-concept factors between the attachment factors and college adjustment was not supported.

Gender Differences

Hypothesis 4. Gender differences among the attachment variables were examined using the multivariate analysis of variance (MANOVA), with gender used as the independent variable and the three IPPA-R factor scores (Mother, Father, Peer) as dependent variables. MANOVA allows for examination of multiple dependent variables all at once (Cone & Foster, 1993) after certain assumptions are met, such as homogeneity of variance, independence of observations, linear relationships among all dependent variables, absence of multicollinearity, singularity, and multivariate normal distributions. An examination of the current study data for Hypothesis 4 revealed that all of the MANOVA assumptions were met.

Results of the MANOVA analysis did not support Hypothesis 4 for the present sample. With the use of Wilks' criterion, the combined dependent variables were not significantly affected by gender, $F(3, 154) = 2.43$, $p = .068$. In other words, the men and women in the current sample reported comparable levels of combined attachment to their mothers, fathers, and peers.

The effect of gender on the individual attachment factors was investigated in follow-up univariate analyses. Peer Attachment was significantly affected by gender, approximate $F(1, 156) = 4.22$, $p = .042$. In other words, the women in the sample reported significantly stronger attachments to their peers than the men did. On the other hand, there were no differences between men and women in this sample in terms of Mother Attachment or Father Attachment.

Hypothesis 5. Gender differences in the overall self-concept of the present sample were investigated with a two-sample t -test, with the Total Self-Concept score from the TSCS-2 as the dependent variable. Independent sample t -tests are used to examine differences between two groups on some variable of interest (Cone & Foster, 1993). An examination of the data for Hypothesis 5 revealed that the

assumptions for t -tests were met, such as homogeneity of variance, underlying normal distribution, and independent scores within cells.

Results from the independent two-sample t -test supported Hypothesis 5, $t(156) = -.09$, $p = .926$, indicating that the male and female students in the present sample reported comparable levels of overall self-concept.

Gender differences among the specific self-concept factors were examined using the multivariate analysis of variance (MANOVA), with gender used as the independent variable and the six TSCS-2 subscale scores as dependent variables. An examination of the data for Hypothesis 5 revealed that all of the MANOVA assumptions were met.

Results of the MANOVA analysis revealed that, with the use of Wilks' criterion, the combined self-concept dependent variables were significantly affected by gender, approximate $F(6, 151) = 2.679$, $p = .017$. Approximately 10% of the variability in the set of self-concept scores was explained by the main effect of gender, $\eta^2 = .096$.

The effect of gender on the individual self-concept factors was investigated in follow-up univariate analyses. Moral Self-Concept was significantly affected by gender,

approximate $F(1, 156) = 5.25$, $p = .023$. In other words, females in this sample reported significantly higher levels of Moral Self-Concept than males. On the other hand, there were no differences between men and women in this sample in terms of Physical, Personal, Social, Family, and Academic/Work Self-Concept scores.

CHAPTER IV

DISCUSSION

The transition to college is usually the first time many late adolescents live apart from their parents for an extended period of time, making it an important developmental task (Kenny, 1987) to negotiate. Leaving home is a major life transition that requires a variety of adaptational resources. Bowlby's (1969/1982, 1973, 1980) attachment theory has been refined by Kenny and Rice (1995) in a manner that explains how internal working models of late adolescents are the basis of external and internal adaptational resources that can determine the level and quality of their adjustment to college. The Kenny and Rice model may be interpreted to suggest that external resources should include relationships with parents and friends, while internal resources can include self-concept, which is an internal perception of the self as good, worthy, and lovable. According to Kenny and Rice, "these resources are assumed to moderate or buffer the effects of developmental challenges and stressful events on adjustment" (p.437).

Many researchers have studied the various external resources available to late adolescents in order to understand and better predict how the transition to college can be successfully undertaken, such as family relationships, social support, or family environment (Berman & Sperling, 1991; Calloni & Handal, 1992; Kenny & Donaldson, 1991, 1992; Lapsley, Rice, & Fitzgerald, 1990; Rice, Fitzgerald, Whaley, & Gibbs, 1995; Schultheiss & Blustein, 1994b; Whaley, 1994/1995). Others have examined internal resources thought to affect the adjustment process, such as coping, optimism, self-esteem, affect regulation, and self-efficacy (Aspinwall & Taylor, 1992; Kobak & Sceery, 1988; Mallinckrodt, 1992; Whaley, 1994/1995). Few (Brooks & DuBois, 1995; Mooney, Sherman, & Lo Presto, 1991) have looked at self-concept, defined as a person's perception of himself or herself, as an internal resource potentially useful during the transition to college.

The purpose of the present study was to extend and further clarify the ways that quality attachment relationships and a positive self-concept conjointly may promote healthy adaptation in the college milieu. In particular, the present study examined the influence of self-concept as a mediating variable with respect to

attachment and healthy adjustment to college. Furthermore, the study attempted to illuminate the important facets and levels of self-concept in a late adolescent population in the United States.

According to Baron and Kenny (1986), a mediator variable accounts for the relationship between the predictor and criterion variables. Mediator variables "explain how external physical events take on internal psychological significance" (p. 1176). The authors submit that three conditions must exist for a variable to be considered a mediator variable. First, the predictor (Attachment) must be associated with the mediator variable (Self-Concept). Second, the predictor variable must be associated with the criterion variable (College Adjustment). Third, when both the predictor and mediator are used to predict the criterion, the mediator must be associated with the criterion variable. Finally, the association between the mediator and the criterion must be greater than the relationship between the predictor and criterion, and the effect of the predictor on the criterion will decrease when the mediator is included in the equation. The first three hypotheses for the current study

are parallel to the steps necessary to confirm self-concept as a mediating variable.

Discussion of Results

Hypothesis 1 proposed that attachments to mothers, fathers, and peers would be significantly associated with overall self-concept. The results of the regression confirmed the relationship between attachment and self-concept for the men and women in the study. Examination of the individual predictor variables revealed that the relationships between attachment and self-concept varied by gender. For the men and women in the study, maintaining a secure maternal relationship was most significantly related to positive levels of self-concept. Though somewhat less important than the maternal relationship, a secure relationship with friends was related to positive levels of self-concept for the men. A quality, secure paternal attachment was predictive of high self-concept for the women, though to a lesser degree than the maternal association.

These findings are consistent with previous research (Armsden & Greenberg, 1987; Greenberg, Siegel, & Leitch, 1983), which found that overall level of self-concept was significantly predicted by the attachments to parents and

peers. However, the current results clarify the gender differences among the individual predictors, as the results from earlier studies were not presented by gender. The association between attachment and self-concept found in this study supports the importance of secure attachment relationships in the development of positive internal representations of the self and associated feelings of goodness, worth, and lovability.

Hypothesis 2 stated that attachments to mothers, fathers, and peers would be significantly related to healthy college adaptation. The multivariate multiple regression confirmed the significant relationship between attachment and college adjustment for the men and the women in the study. Examination of the individual predictor variables revealed that the relationships between attachment and college adjustment varied by gender. For the men in the study, being engaged in positive, secure relationships with peers was the most important predictor of healthy adaptation to college, while maintaining a secure maternal relationship was significant but less important. A positive maternal relationship was most significantly related to positive college adaptation for the females in the study, while being engaged in a positive

relationship with their father was somewhat less significant. The current results are consistent with several studies that have shown positive relationships between parental attachment, peer attachment, and college adjustment (e.g., Kenny & Donaldson, 1991, 1992; Lapsley et al., 1990; Rice et al., 1995).

In summary, the first and second steps of the mediational model were confirmed with Hypothesis 1 and Hypothesis 2 for both the men and women in the present study.

Hypothesis 3 of this study proposed that the various self-concept factors would be significantly associated with healthy adjustment to college, and would have a stronger association than the relationship between attachment and adjustment to college (Hypothesis 2 results). Because of multicollinearity problems with the individual self-concept factors, the overall level of self-concept was used to test the mediational model in the present study. The current regression results supported the hypothesis that the mother, father, and peer attachment bonds in conjunction with self-concept are significantly associated with college adjustment. Furthermore, a positive self-view was more important than all of the attachment factors in predicting

adjustment for the men and women in the study, while the effect of the attachment variables decreased when overall self-concept was included in the model. Positive connections with peers remained the only other important associated dimension in college adjustment for the men in the study.

The significant result from Hypothesis 3 is the final step in confirming the overall mediational model for both men and women in the study, suggesting that an indirect association exists between attachment and college adjustment with self-concept mediating the relationship. Previous investigations (e.g., Kenny & Donaldson, 1991, 1992; Lapsley et al., 1990; Rice et al., 1995) considered only the direct relationship between attachment and adjustment to college, when the interactions between the constructs appear to be more complex.

The present finding that self-concept explained almost 25% of the variance in college adjustment scores is consistent with and adds to a very limited body of research (Brooks & DuBois, 1995; Mooney et al., 1991), which has concluded that a positive self-concept may help buffer the potentially challenging developmental task of starting college. It appears that, for first year students, a

positive self-view is an important internal resource that is associated with healthy adaptation to college. However, the causal pathway between self-concept and adjustment has not been made clear due to the cross-sectional designs of the current and previous studies. It is possible that the self-concept is bolstered or improved through successful negotiation of important developmental tasks such as beginning college. In the future, longitudinal designs may clarify whether a positive self-concept is an antecedent condition to, a correlate of, or a result of healthy college adjustment.

Hypothesis 4 stated that there would be gender differences in the set of attachment factors. The results from the present study did not confirm the prediction that females would view their relationships with their mothers, fathers, and peers more positively than the males. The non-significant findings with respect to parental attachment are not surprising, as several previous studies revealed that females reported stronger parental attachments (Calloni & Handal, 1992; Kenny, 1987, 1994; Kenny & Donaldson, 1991; Schultheiss & Blustein, 1994a), while several studies revealed no gender differences in level of

parental attachment (Armsden & Greenberg, 1987; Greenberg et al., 1983; Lapsley et al., 1990; Rice et al., 1995).

Examination of the individual attachment variables revealed that the women characterized their friendships more positively than the men did, which is consistent with previous findings (Armsden & Greenberg, 1987; Lapsley et al., 1990; Rice et al., 1995). The females in the present study portrayed their relationships with their parents as positively as the males characterized their parental relationships.

Hypothesis 5 of this study stated that there would be no gender differences within the self-concept factors. The results of the study supported the prediction that males and females would similarly perceive themselves as having value and worth, a finding consistent with other studies (Armsden & Greenberg, 1987; Erwin, 1982; Lapsley et al., 1990). Examination of the individual self-concept factors revealed that women in the current study reported significantly higher levels of Moral Self-Concept, which is defined as a feeling of moral worth, of being a "good" person, and satisfaction with one's religious status.

An interesting finding of the present study is that, for the men, a positive and secure paternal relationship

does not tend to be associated with peer relationships, moral self-concept, social self-concept, or academic/work self-concept. On the other hand, the women in the sample reported positive paternal relationships that were not associated with only moral and academic/work self-concepts. In other words, favorable paternal relationships appear to be more important in developing friendships and in affecting more of the various types of self-concept for the females in the sample.

Similarly, peer attachments were not significantly related to moral, family, or academic/work self-concepts for the men in the present study, while friendships tended to be significantly linked with parental attachment and all types of self-concept except academic/work for the women. In other words, positive secure friendship bonds appear to be related to healthy parental relationships and appear to be more important in affecting various types of self-concept for the females in the sample.

The results suggest that there are gender differences in the development of the complementary and mutually confirming internal working models of others and the self proposed by Bowlby (1973). The current results clarify the findings in previous research (Armsden & Greenberg, 1987;

Greenberg et al., 1983; Lapsley et al., 1990), which did not report correlations, presented mother and father attachment together, did not present all the self-concept factors, and included male and female associations together.

Implications for Practice

The importance of parental attachments, peer attachments, and self-concept to the process of negotiating the first year of college appears salient to various groups on campus. It would be helpful to offer informational classes to traditional age college students about the variety of factors, including attachment and self-concept, that may affect the transition to college. The classes would be designed to normalize the adjustment experience by educating students and informing them about the resources available if they are having trouble.

Student service personnel, including residence hall staff, faculty, and academic advisors could be trained to impart information about the college adjustment experience in informal and personal interactions with students. Furthermore, the training may allow student service staff to be alert to the signs that freshmen are having trouble negotiating the challenges of starting college.

Clinical staff and trainees at university or college counseling and guidance centers could be informed about the effects of attachment and self-concept factors on college adjustment in didactic seminars. The clinicians could include questions or questionnaires about parental attachments, peer relationships, and self-view in their conceptual assessments. Therapeutic goals could be refined to include the information about specific gender differences in the correlates of adjustment.

Implications for Future Research

In order to confirm the mediational model of attachment, self-concept, and college adjustment, future research should be expanded to include participants from a wider variety of age groups, socioeconomic strata, ethnic or cultural groups, and types of university or college settings (e.g., rural or urban locations). Results from a wider variety of students will allow greater generalizability of the results. Students from community colleges, in particular, may exhibit different patterns of interactions of the variables within the model.

A greater understanding of the complexities of the college student experience while beginning school could be gained by adding other ratings of college adjustment, such

as the following: (a) self-report measures of psychological symptoms (Kenny & Donaldson, 1991); (b) self-report measures of personality factors (Kenny, 1987); (c) reports gathered by program staff of depression, suicidal behavior, counseling received, and stress-related attrition (Cornell et al., 1991); (d) peer ratings of adjustment (Cornell et al., 1991); and (e) self-report measures of satisfaction with the academic program.

The data for the present study were collected in a cross-sectional design. The effects of attachment and self-concept on college student adjustment could be clarified further if the variables were assessed before participants started school, once they have completed a few weeks on campus, after a semester, and at the end of the first year. The beginning adjustment scores could then be used as covariates with later scores to specify the true effect of the predictor and mediator variables on the criterion.

Limitations of the Study

Cone and Foster (1993) propose that possible study limitations occur in four areas, as follows: (a) issues of internal validity impacted by the research design chosen; (b) issues of external validity; (c) issues of measurement, such as reliability, validity, response sets, or other

measurement problems; and (d) statistical analysis problems.

In terms of internal validity, the present study used a correlational design, which allowed greater statistical power than group comparisons. However, inferences about causality cannot be made because the variables were not experimentally manipulated. It appears that a further problem with internal validity has to do with additional data that, if collected, may have helped discover the relationship between the independent and dependent variables. It is highly likely that attachment and self-concept are not the only important predictors of healthy college adaptation.

External validity issues pertinent to the current study involve limitations of the generalizability of the findings to other populations. The current study was limited to students in their first year of college who were between the ages of 18 and 20, so the results may not apply to the increasing numbers of non-traditional students beginning or resuming their college studies at older ages.

Generalizations to students from different ethnic groups, from non-intact families, from families with parents in non-professional occupations, and from families

with less well-educated parents may be impacted by the homogeneous nature of the current sample, which was predominantly Caucasian, from intact families, whose parents are in largely professional, managerial, and sales occupations, and whose parents are generally well-educated.

Measurement issues relevant to the current study include reliance upon three self-report measures as indicators of the constructs. Self-report measures may be imperfect predictors of actual behavior, and scores may be impacted by subject reactivity to the measurement procedures, less-than-reliable ratings by subjects on the constructs, missing data (e.g., items inadvertently skipped), as well as biases which may affect results (Cone & Foster, 1993), such as social desirability.

Finally, the subscales of the Tennessee Self-Concept Scale, Second Edition (TSCS-2; Fitts & Warren, 1996) were the intended mediator variables for the regressions. High bivariate and multivariate correlations between the subscales led to a decision to collapse them into the Total Self-Concept score to test the mediational hypotheses. Regression analyses are not robust to violations of collinearity. In addition, standard multiple regression analyses suffer from specification error, where the

coefficients derived may not reflect real associations due to the inclusion of too many irrelevant variables to the analyses. Future analyses may include hierarchical regressions to specify the factors thought to be most important to college student adjustment to get a clearer picture of the mediational effects of self-concept factors.

Future investigations in the area of parental attachment, self-concept, and college adjustment may look toward elaborating the self-concept construct further as a predictor and in terms of gender differences, perhaps by using numerous measures which are not all self-report. Additional knowledge about parental and peer attachments may be gained by obtaining ratings from the parents and friends on various aspects of their relationships with their children and friends. Certainly, a future study should include more complex, multifaceted measures of college adjustment, perhaps in combination with academic and behavioral indices.

APPENDIX A
PERSONAL DATA QUESTIONNAIRE

PERSONAL DATA QUESTIONNAIRE

Subject _____

INSTRUCTIONS: In the space next to the items below, please enter the number that best answers the question. Fill in information when requested in the spaces provided. Please answer every item.

_____ AGE

_____ YEAR OF BIRTH

_____ GENDER

1. male
2. female

_____ CLASS

1. freshman
2. sophomore
3. junior
4. senior
5. graduate student
6. other

_____ ETHNIC/ RACIAL BACKGROUND

1. African American
2. Native American
3. Caucasian
4. Asian
5. Hispanic
6. other

_____ RELIGIOUS AFFILIATION

1. Protestant
2. Catholic
3. Jewish
4. Islam
5. Eastern religions
6. none
7. other (please specify) _____

_____ RELATIONSHIP STATUS

1. currently married
2. currently separated
3. divorced
4. widowed
5. single, long-term relationship
6. single, actively dating
7. single, not actively dating

_____ WHAT PERCENT OF YOUR LIVING EXPENSES DO YOU PAY?

_____ CURRENT LIVING SITUATION

1. with both parents at parents' home
2. with one parent at parent's home
3. alone in house/apartment
4. with other(s) in house/apartment
5. in residence hall

_____ MY PARENTS ARE:

1. married, living together
2. married, living apart
3. divorced, not remarried
4. divorced, one remarried
5. divorced, both remarried
6. both parents deceased
7. mother deceased
8. father deceased
9. never married

_____ IF YOUR PARENTS ARE DIVORCED, WHAT YEAR DID THEY DIVORCE?

_____ HOW CLOSE IS YOUR RELATIONSHIP WITH YOUR FATHER?

1. extremely
2. very
3. somewhat
4. not very
5. not at all

_____ IF YOU DO NOT LIVE WITH YOUR FATHER, HOW OFTEN DO YOU SEE HIM?

1. about once a week
2. about once a month
3. about once every few months
4. about once a year
5. about once every few years
6. never

_____ HOW CLOSE IS YOUR RELATIONSHIP WITH YOUR MOTHER?

1. extremely
2. very
3. somewhat
4. not very
5. not at all

_____ IF YOU DO NOT LIVE WITH YOUR MOTHER, HOW OFTEN DO YOU SEE HER?

1. about once a week
2. about once a month
3. about once every few months
4. about once a year
5. about once every few years
6. never

_____ WHAT IS YOUR FATHER'S OCCUPATION?

1. professional
2. managerial
3. sales
4. trained worker
5. laborer
6. does not work outside the home

_____ WHAT IS YOUR MOTHER'S OCCUPATION?

1. professional
2. managerial
3. sales
4. trained worker
5. laborer
6. does not work outside the home

Answer the following **two** questions if you reside with a step-parent.

_____ WHAT IS YOUR STEP-FATHER'S OCCUPATION?

1. professional
2. managerial
3. sales
4. trained worker
5. laborer
6. does not work outside the home

_____ WHAT IS YOUR STEP-MOTHER'S OCCUPATION?

1. professional
2. managerial
3. sales
4. trained worker
5. laborer
6. does not work outside the home

For the following questions, use the scale below to indicate highest year of education completed in numbers:

High School	College	Master's	Doctoral
9 10 11 12	13 14 15 16	17 18	19 20+

_____ FATHER'S EDUCATIONAL LEVEL

_____ MOTHER'S EDUCATIONAL LEVEL

If you reside with a step-parent, answer the following:

_____ STEP-FATHER'S EDUCATIONAL LEVEL

_____ STEP-MOTHER'S EDUCATIONAL LEVEL

APPENDIX B

INVENTORY OF PARENT AND PEER ATTACHMENT - REVISED

The Inventory of Parent and Peer Attachment - Revised is a copyrighted instrument. For more information about this instrument, please write:

Mark T. Greenberg, Ph.D.
Bennett Chair of Prevention Research
Director, Prevention Research Center
Henderson Building South - 109
The Pennsylvania State University
University Park, PA 16802
mxg@psu.edu

APPENDIX C

TENNESSEE SELF-CONCEPT SCALE - SECOND EDITION

The Tennessee Self-Concept Scale - Second Edition is a copyrighted instrument. For information about this instrument, please write or call:

Western Psychological Services
12031 Wilshire Boulevard
Los Angeles, CA 90025-1251
1-800-648-8857

APPENDIX D

STUDENT ADAPTATION TO COLLEGE QUESTIONNAIRE

The Student Adaptation to College Questionnaire is a copyrighted instrument. For information about this instrument, please write or call:

Western Psychological Services
12031 Wilshire Boulevard
Los Angeles, CA 90025-1251
1-800-648-8857

APPENDIX E
INFORMED CONSENT FORM

INFORMED CONSENT FORM

This study will explore interpersonal relationships of college students. It is hoped that the results will increase our understanding of young adult development. Participation will involve completing a demographic form and three questionnaires that will take approximately one hour and thirty minutes of your time. If you choose to participate in this study, your answers will be kept confidential. There will be no risks or discomforts involved in the study. You may withdraw from the study at any time if you choose to do so.

The questionnaires each contain instructions that are self-explanatory. It is very important that you answer every question. Please be completely honest. Your answers are entirely confidential and will be useful only if they accurately describe you.

PLEASE DO NOT PUT YOUR NAME ON ANY OF THE QUESTIONNAIRES.

To receive a summary of the results of this study, please send your request with a self-addressed stamped envelope to Jeanne Selby at the University of North Texas Psychology Department. If you have any questions or problems that arise in connection with your participation in this study, you may contact Jeanne Selby, the researcher, at (940) 565-2671.

If you are willing to participate, please sign below. This form will be separated from your questionnaires upon receipt. Thank you for your participation.

Jeanne Selby, M.S.
Counseling Psychology
University of North Texas

Ed Watkins, Ph.D.
Professor, Counseling Psychology
University of North Texas

Name (Print): _____

Signature: _____

Date: _____

THIS PROJECT HAS BEEN REVIEWED BY THE UNIVERSITY OF NORTH TEXAS COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (Phone: 940-565-3940).

APPENDIX F

TABLES

Table 1

Demographic Characteristics of the Subjects

Variables		Men (n = 79) Percent	Women (n = 79) Percent	Total Percent
Age	18	35	42	39
	19 or 20	65	58	61
Ethnic/Racial Background				
	African American	17	13	15
	Asian	6	4	5
	Caucasian	58	73	66
	Hispanic	14	6	10
	Other	5	4	4
Percent Expenses Paid by Student				
	Zero	23	30	27
	1 - 25%	30	30	30
	26 - 50%	25	15	20
	51 - 75%	8	3	5
	76 - 100%	14	22	18
Student Living Situation				
	With Parent(s)	32	20	26
	In Residence Hall	52	65	58
	In Apartment	16	15	16
Parent Marital Status				
	Married	67	56	62
	Separated or Divorced	11	15	13
	Divorced & Remarried	15	23	19
	Father Deceased	3	1	2
	Never Married	4	5	4
Parent/Step-Parent Occupation				
	Professional	42	34	38
	Managerial or Sales	24	33	28
	Trained worker	17	17	17
	Laborer	10	7	9
	Works at home	7	9	8
Parent/Step-Parent Education				
	No high school degree	7	6	6
	High School Degree	16	30	23
	Some College	33	28	31
	Bachelors Degree	28	22	25
	Graduate Work or Degree	16	14	15

Table 2

Descriptive Statistics for All Measures

Measure	Males ^a		Females ^a	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
IPPA-R Mother	96.6	17.6	99.2	20.3
IPPA-R Father	86.3	22.1	81.4	27.5
IPPA-R Peer	98.7*	15.0	103.9*	16.5
TSCS-2 Full	280.7	32.6	281.2	30.3
Physical Self-Concept	51.9	8.6	50.3	8.0
Moral Self-Concept	45.0*	6.5	47.2*	5.6
Personal Self-Concept	46.7	6.7	47.1	6.1
Family Self-Concept	45.0	8.2	46.0	7.8
Social Self-Concept	46.8	7.0	46.8	6.6
Academic Self-Concept	45.3	6.6	43.8	5.6
SACQ Full	386.3	61.4	382.4	68.5
Academic Adjustment	135.2	23.3	139.4	26.0
Social Adjustment	114.3	25.3	110.7	31.2
Personal/Emotional Adj.	82.6	19.9	79.7	18.2
Institutional Attachment	94.8	19.2	91.0	22.9

Note. IPPA-R = Inventory of Parent and Peer Attachment, Revised; TSCS-2 = Tennessee Self-Concept Scale, Second Edition; SACQ = Student Adaptation to College Questionnaire. Higher scores on the IPPA-R subscales reflect a greater degree of attachment; higher scores on the TSCS-2 indicate a greater overall level of self-concept; and higher scores on the SACQ reflect better overall adjustment to college.

^an = 79

p < .05

Table 3

Cronbach's Coefficient Alpha Estimates for All Measures

Measure	<u>Males^a</u>	<u>Females^a</u>
IPPA-R Mother	.944	.963
IPPA-R Father	.952	.971
IPPA-R Peer	.930	.960
TSCS-2 Full Scale	.943	.945
Physical Self-Concept	.871	.850
Moral Self-Concept	.790	.780
Personal Self-Concept	.816	.823
Family Self-Concept	.869	.868
Social Self-Concept	.848	.870
Academic/Work Self-Concept	.769	.754
SACQ Full Scale	.918	.935
Academic Adjustment	.833	.877
Social Adjustment	.848	.911
Personal/Emotional Adjustment	.837	.798
Institutional Attachment	.823	.880

Note. IPPA-R = Inventory of Parent and Peer Attachment, Revised; TSCS-2 = Tennessee Self-Concept Scale, Second Edition; SACQ = Student Adaptation to College Questionnaire.

^an = 79.

Table 4

Correlations Between Predictor, Mediator, and Criterion
Measures for Male^a and Female^a Participants

Measure	IPPA-R Mother	IPPA-R Father	IPPA-R Peer	TSCS-2 Total	SACQ Full
IPPA-R Mother	-	.29**	.30**	.60**	.43**
IPPA-R Father	.19*	-	.02	.23*	.24*
IPPA-R Peer	.28**	.32**	-	.38**	.45**
TSCS-2 Total	.61**	.39**	.37**	-	.71**
SACQ Full	.41**	.33**	.35**	.69**	-

Note. Correlations for the male subjects appear above the diagonal and correlations for the female subjects appear below the diagonal. All hypotheses were one-tailed, predicting that higher scores on the predictor and mediator measures would be associated with better college adjustment.

^an = 79.

*p < .05. **p < .01.

Table 5

Correlations Between Predictor and Mediator Subscales for
Male^a and Female^a Participants

	MoAtt	FaAtt	PeAtt	PhySC	MorSC	PerSC	FamSC	SocSC	AcSC
MoAtt	-	.29**	.30**	.54**	.27**	.52**	.69**	.45**	.12
FaAtt	.19*	-	.02	.21*	.08	.19*	.38**	.15	-.03
PeAtt	.28**	.32**	-	.40**	.14	.43**	.17	.38**	.16
PhySC	.52**	.29**	.27**	-	.41**	.72**	.60**	.74**	.29**
MorSC	.28**	.13	.31**	.35**	-	.47**	.46**	.31**	.29**
PerSC	.54**	.36**	.42**	.71**	.56**	-	.57**	.76**	.41**
FamSC	.75**	.54**	.23*	.54**	.35**	.60**	-	.47**	.13
SocSC	.34**	.20*	.44**	.56**	.58**	.70**	.35**	-	.29**
AcSC	.27**	.18	.06	.47**	.43**	.53**	.37**	.40**	-

Note. MoAtt = mother attachment; FaAtt = Father Attachment; PeAtt = Peer Attachment; PhySC = Physical Self-Concept; MorSC = Moral Self-Concept; PerSC = Personal Self-Concept; FamSC = Family Self-Concept; SocSC = Social Self-Concept; AcSC = Academic/Work Self-Concept. Correlations for male subjects appear above the diagonal and correlations for female subjects appear below the diagonal. All hypotheses were one-tailed, predicting that higher attachment scores would be associated with higher self-concept scores.

^an = 79.

*p < .05. **p < .01.

Table 6

Results of Regression Analyses for Squared Multiple
Correlations (SMC)

Variables	Men ^a <u>R²</u>	Women ^a <u>R²</u>
Mother Attachment	.510	.638 ^b
Father Attachment	.211 ^b	.442
Peer Attachment	.232	.377 ^b
Physical Self-Concept	.655	.572
Moral Self-Concept	.327	.435
Personal Self-Concept	.715	.730
Family Self-Concept	.638 ^b	.726
Social Self-Concept	.632 ^b	.599
Academic/Work Self-Concept	.214	.378

Note. R² values represent the results of using each predictor and mediator variable as dependent variable in a regression equation with the other independent variables.

^an = 79.

^bTransformed variable.

Table 7

Standard Multiple Regression of Attachment Variables on
Overall Self-Concept (Men = 79; Women = 79)

Variables	Unstandardized Coefficients B	Standardized Coefficients β	t	sr_i^2 (unique)
Mother Attachment				
Men	.928	.50	5.08***	.20
Women ^a	-8.357	-.51	-5.64***	.23
Father Attachment				
Men ^a	-1.495	-.09	-.92	.01
Women	.283	.26	2.88**	.06
Peer Attachment				
Men	.483	.22	2.38*	.05
Women ^a	-10.782	-.13	-1.39	.01
Model Summaries:				
	<u>Men</u>		<u>Women</u>	
	$\underline{R}^2 = .41^b$		$\underline{R}^2 = .46^c$	
Adjusted	$\underline{R}^2 = .38$		Adjusted	$\underline{R}^2 = .44$
	$\underline{R} = .64$			$\underline{R} = .68$

^a Transformed variable.

^b Unique variability = .26; shared variability = .15.

^c Unique variability = .30; shared variability = .16.

* $\underline{p} < .05$. ** $\underline{p} < .01$. *** $\underline{p} < .001$

Table 8

Standard Multiple Regression of Attachment Variables on
Overall College Adjustment (Men = 79; Women = 79)

Variables	Unstandardized Coefficients B	Standardized Coefficients β	t	sr_i^2 (unique)
Mother Attachment				
Men	.931	.27	2.52*	.06
Women ^a	-12.241	-.33	-3.11**	.10
Father Attachment				
Men ^a	-4.875	-.15	-1.48	.02
Women	.590	.24	2.26*	.05
Peer Attachment				
Men	1.477	.36	3.59**	.12
Women ^a	-22.645	-.12	-1.10	.01

Model Summaries:

<u>Men</u>	<u>Women</u>
$R^2 = .32^b$	$R^2 = .25^c$
Adjusted $R^2 = .29$	Adjusted $R^2 = .22$
$\underline{R} = .56$	$\underline{R} = .50$

^a Transformed variable.

^b Unique variability = .20; shared variability = .12.

^c Unique variability = .16; shared variability = .09.

* $p < .05$. ** $p < .01$.

Table 9

Standard Multiple Regression of Attachment and Overall
Self-Concept on College Adjustment (Men = 79; Women = 79)

Variables	Unstandardized Coefficients B	Standardized Coefficients β	t	sr_i^2 (unique)
Mother Attachment				
Men	-.181	-.05	-.52	.00
Women ^a	.001	.00	.00	.00
Father Attachment				
Men ^a	-3.085	-.10	-1.15	.01
Women	.175	.07	.76	.00
Peer Attachment				
Men	.898	.22	2.60*	.04
Women ^a	-6.834	-.04	-.39	.00
Total Self-Concept				
Men	1.198	.64	6.33***	.24
Women	1.466	.65	5.70***	.23

Model Summaries:

	<u>Men</u>	<u>Women</u>
	$\underline{R}^2 = .56^b$	$\underline{R}^2 = .48^c$
Adjusted	$\underline{R}^2 = .53$	$\underline{R}^2 = .45$
	$\underline{R} = .75$	$\underline{R} = .69$

^a Transformed variable.

^b Unique variability = .29; shared variability = .27.

^c Unique variability = .23; shared variability = .25.

* $p < .05$. *** $p < .001$.

Table 10

Comparison of Beta Coefficients for Attachment Predictor Variables in Hypothesis 2 and Hypothesis 3^a

Predictor Variables	Hypothesis 2 Standardized Coefficients β	Hypothesis 3 Standardized Coefficients β
Mother Attachment		
Men	.27*	-.05
Women ^b	-.33**	-.00
Father Attachment		
Men ^b	-.15	-.10
Women	.24*	.07
Peer Attachment		
Men	.36**	.22*
Women ^b	-.12	.04

^aMen = 79; Women = 79.

^bTransformed variable.

* $p < .05$.

** $p < .01$

Table 11
Standard Multiple Regression of Attachment and Self-Concept
Variables on College Adjustment (Men = 79; Women = 79)

Variables	B	β	<u>t</u>	<u>s_i²</u> (unique)
Mother Attachment				
Men	-.132	-.038	-.338	.00
Women ^a	-1.313	-.036	-.258	.00
Father Attachment				
Men ^a	-3.009	-.093	-1.052	.01
Women	.230	.092	.829	.01
Peer Attachment				
Men	.677	.165	1.851	.02
Women	3.993	.021	.200	.00
Physical S/C				
Men	1.562	.219	1.647	.02
Women	1.342	.156	1.228	.01
Moral S/C				
Men	.344	.036	.381	.00
Women	-.270	-.022	-.198	.00
Personal S/C				
Men	2.370	.258	1.766	.02
Women	4.344	.384	2.396*	.04
Family S/C				
Men ^a	-4.054	-.072	-.555	.00
Women	.292	.033	.207	.00
Social S/C				
Men ^a	-10.478	-.154	-1.198	.01
Women	1.980	.190	1.447	.02
Academic-Work S/C				
Men	.699	.075	.850	.00
Women	.208	.017	.162	.00

Model Summaries:

	<u>Men</u>		<u>Women</u>
	$\underline{R^2} = .58^b$		$\underline{R^2} = .52^c$
Adjusted	$\underline{R^2} = .52$	Adjusted	$\underline{R^2} = .46$
	$\underline{R} = .76$		$\underline{R} = .72$

^a Transformed variable.

^b Unique variability = .08; shared variability = .50.

^c Unique variability = .07; shared variability = .45.

*p < .05.

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